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| Course: | Мicroclimate in animal husbandry |
| Course id: ZMPT1I07 |
| Number of ECTS: 6 |
| Teacher: | Miodrag S Zoranović, Mladen S Ivanišević |
| Course status | Elective |
| Number of active teaching classes (weekly) |
| Lectures: 2 | Practical classes: 2 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | None |
| 1. Educational goal

Pointing out the importance of the microclimate in the technology of cultivation of animal species in terms of technological productivity, the quality of the base products, environmental protection and energy saving. |
| 1. Educational outcomes

High technical ability to lead the process in livestock breeding, involvement in contemporary trends in the field of environmental protection, the choice and design of ventilation systems, air filtration system selection in a controlled area, taking serious steps in the field of rational energy consumption, alternative energy choice, apply effects of the heat pump and so on. |
| 1. Course content

Theory lessonsThe definition of the relevant factors microclimate controlled area in livestock. Reference values microclimate factors in breeding species according to age. Natural and forced modes of regulation factors of the microclimate of the types of facilities for breeding animals. The existing heating systems and their impact on microclimate factors controlled area in livestock. Existing and new ventilation systems of buildings for livestock. Air filtration as a factor in the reduction of energy inputs, increase the quality of the final product, environmental protection and human factors as direct participants of the technological process.Practical classes: Modelling System for control microclimate in livestock buildings. Participation in the implementation of national and technological projects on the subject of maintaining the microclimate. Going into the field of monitoring and solving significant problems in farming. |
| 1. Teaching methods

Theoretical basis of factors microclimate, direct demonstration of the practical solutions in practice and laboratory conditions with direct participation in the implementation of appropriate technical and technological solutions, presentations in the form of animation processes manure, heating, ventilation and air filtration, finishing manure ... |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam  | Mandatory | Points |
| Lecture attendance | Yes/No | 10 | *Oral part of the exam* | Yes | 40 |
| Test | Yes/No | 20 |  |
| Exercise attendance | Yes/No |  |
| Тerm paper | Yes/No | 30 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  |  | ASHRAE®HANDBOOK | Inch-Pound Edition. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. 1791 Tullie, N. E, Atlanta | 2009 |
|  | El Houssine Bartali andFrederick Wheaton | CIGR Handbook of Agricultural Engineering | Volume II: Animal Production & Agricultural Engineering. Edited by CIGR- The International Commission of Agricultural Engineering. Part I:, Livestock Housing and Environment,. Part II: Aquaculture Engineering. University of Maryland, USA | 1999 |
|  | M. Navaratnasamy and J. J. R. Feddes | Odour Emissions from Poultry Manure/Litter and Barns. Final report submitted to Poultry Industry Council | Alberta Agriculture, Food and Rural Development, J. G. O'Donoghue Building, 7000-113 St., Edmonton, AB, T6H 5T6; Agricultural, Food and Nutritional Science, 4-10 Agriculture/Forestry Centre University of Alberta, Edmonton, AB, T6G 2P5 | 2004 |
|  | Luke Charles Formosa | Calculating air exchange rates from broiler livestock houses | University of Göttingen | 2005 |
|  | C. H. BURTON and C. TURNER | MANURE MENAGEMENT | Treatment Strategies for Sustainable Agriculture 2nd Edition. Silsoe Research Institute | 2003 |

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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationMASTER ACADEMIC STUDIES *AGRICULTURAL ENGINEERING* |
| Table 5.2 Course specification |